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Computer Technology Exports Under the Export Administration Amendments Act of 1985: Taking Competitive Advantage of China's Open Door

By SYLVIA R. GILL

Member of the Class of 1988

International competitiveness is a growing concern for the computer industry and for the United States Government. When the People's Republic of China (China) recently opened its doors to foreign trade, representatives of industry and government perceived the opportunities offered by a new foreign market. China's interest in computer technology acquisitions may allow the United States to improve its stance in the world marketplace.

Bilateral interest alone, however, will not spur trade. A favorable trade environment must exist between China and the United States. China has officially adopted a trade policy that encourages imports of computer technology, but United States exporters encounter barriers that limit their ability to meet Chinese demands for their products.

Extensive controls on exports reflect United States trade policy. The Export Administration Act of 1979, as amended by the Export Administration Amendments Act of 1985 (Amendments),¹ gives the Commerce Department authority to impose a system of export controls.² The Commerce Department's Office of Export Administration (OEA), which

1. Export Administration Amendments Act of 1985, Pub. L. No. 99-64, §§ 101-301, 99 Stat. 120, 120-62 (1985) (amending and extending Export Administration Act of 1979, §§ 1-24, 50 U.S.C. app. §§ 2401-2421 (1982)) (codified at 50 U.S.C. §§ 2401-2420 (Supp. III 1985)).

2. Until 1949 the U.S. Government imposed export controls during wartime only. The Export Control Act of 1949 was enacted to control the export of advanced technology to the Soviet Union. Export Control Act of 1949, Pub. L. No. 81-11, 63 Stat. 7 (codified as amended at 50 U.S.C. app. §§ 2021-2032 (1964) (expired 1969)). The Export Administration Act of 1969 revised and amended the 1949 legislation. Export Administration Act of 1969, Pub. L. No. 91-184, 83 Stat. 841, (codified as amended at 50 U.S.C. app. §§ 2401-2413 (1976) (expired 1979)). The Export Administration Act of 1979 revised and amended the Export Administration Act of 1969. Export Administration Act of 1979, Pub. L. No. 96-72, 93 Stat. 503 (codified as amended at 50 U.S.C. app., §§ 2401-2420 (1982) (expired 1983)).

administers the system, has broad jurisdiction over the exportation of goods and commercial technical data.³ It has power to regulate re-exports of United States-origin goods and technology⁴ and, in certain cases, it has jurisdiction over exportation of foreign products made with United States technical data or American-manufactured components.⁵ The regulations adopted by the OEA (Regulations) implement the system of export controls through a combination of licensing procedures and specific export restrictions.⁶

Export controls are an especially important consideration for United States companies that manufacture or sell computer technology. Exports of computer technology to China are subject to licensing requirements for trade policy reasons.⁷ Furthermore, United States computer producers are in a vulnerable world market position and, thus, are economically sensitive to export controls imposed by Congress.⁸ Computer companies are economically vulnerable because of rapid technological advances. To win market share and to preserve profit margins, producers of computer technology face time pressures to place high quality, technologically advanced products on the market before their competitors do.

Export administration is one crucial area in which the law can be aligned with trade policy and economic necessity. Proponents of the Amendments believed that legislation could enhance America's competitiveness in international markets. By adopting the Amendments, Congress required the Commerce Department to take steps to improve the efficiency of export regulation and to minimize interference with the ability to engage in commerce.⁹ The Chinese market for exported computer technology provides an opportunity to test the Government's ability to respond effectively to economic and policy demands and thus to improve the United States' competitive stance.

This Note will discuss the impact of United States trade controls on exports of computer technology to China. Section I presents the legislative history of the Amendments. In addition, the perceptions of and

3. Export Administration Act of 1979, 50 U.S.C. app. § 2404 (1979) (amended 1985). For a definition of commercial technical data, see *infra* note 111.

4. 15 C.F.R. § 374.1 (1987).

5. *Id.* § 379.5.

6. *Id.* §§ 368-399. See *infra* text accompanying notes 78-99.

7. See *infra* text accompanying notes 81-83.

8. See *infra* text accompanying notes 18-27.

9. See Export Administration Amendments Act of 1985, 50 U.S.C. §§ 2401-2420 (Supp. III 1985). See also Harris & Bialos, *Congressional Balancing Act Benefits Exporters*, Legal Times, August 5, 1985, at 17, col. 1.

motivations behind export controls will be evaluated by describing both Chinese import policies and United States export policies. Section II discusses the current treatment of computer technology exports to China under the Regulations. Section III describes congressional and industry responses to amended United States export policy. Section IV argues that the current Regulations perpetuate the problems inherent in the export control system. Finally, Section V recommends a broad, sweeping reform of the system as it applies to computer technology exports that are controlled for national security reasons.

I. PROLOGUE TO RELAXED TREATMENT OF COMPUTER TECHNOLOGY EXPORTS

A. Legislative History of the Export Administration Amendments Act of 1985

Congressional consideration of the Amendments began when the Export Administration Act of 1979 (1979 Act)¹⁰ expired on September 30, 1983.¹¹ Attempts to renew the 1979 Act spanned two Congresses and involved numerous delays. The Senate approved the conference report¹² on the pending measure on June 27, 1985.¹³ The House of Representatives approved the Amendments the same day.¹⁴ Two weeks later, the President signed the Amendments into law.¹⁵ The legislation amended and reauthorized the 1979 Act, the main trading law regulating the export of United States goods, technology, and data.¹⁶

Industrial competitiveness is measured by such factors as productivity, real wages, and the trade balance. The trade balance "shows the net figure for the value of all the goods imported and exported by one nation."¹⁷ At the time Congress was considering the Amendments, the competitive position of the American computer industry in the world market was declining.¹⁸ While other nations traditionally had looked to

10. Export Administration Act of 1979, 50 U.S.C. app. §§ 2401-2420 (1982).

11. *Id.* § 2419.

12. S. 883, 99th Cong., 1st Sess. (1985).

13. 131 CONG. REC. S8921 (daily ed. June 27, 1985).

14. *Id.* at H5059.

15. Export Administration Amendments Act of 1985, 50 U.S.C. app. §§ 2401-2420 (Supp. III 1985).

16. Although the Amendments amend the 1979 Act to a degree, they essentially extend the 1979 Act through September 30, 1989. *Id.* See generally *Recent Developments*, 27 HARV. INT'L L.J. 259 (1986).

17. BLACK'S LAW DICTIONARY 130 (5th ed. 1979).

18. Woods, *The U.S. Computer Trade Surplus Erodes*, BUS. AM., Sept. 30, 1985, at 8. See generally OFFICE OF COMPUTERS & BUS. EQUIP., A COMPETITIVE ASSESSMENT OF THE U.S.

the United States for manufactured goods—particularly high technology—foreign producers were increasingly supplying the United States. The overall trade balance was marked by a merchandise trade deficit,¹⁹ that is, the volume of imports exceeded the volume of exports.²⁰ As the overall trade balance declined, the traditionally strong trade surplus²¹ in computer technology also began to dwindle.²² According to Commerce Department figures, the trade surplus for computer equipment and related parts peaked at \$6.8 billion in 1981.²³ Thereafter, as the rate of imports exceeded that of exports, the trade surplus steadily declined to about \$5.9 billion in 1984.²⁴ This trend is expected to continue: the trade surplus may become a trade deficit.²⁵

A major factor in the decline in computer technology market strength has been the substantial importation of computer peripherals, especially disk storage devices (disk drives), printers, display terminals, and related parts and subassemblies.²⁶ The imports issue from foreign suppliers and overseas subsidiaries of American firms.²⁷ These sources represent the first serious foreign competition in the history of the United States computer industry.

It appears that the United States' ability to compete in the world market is eroding. Although the computer sector is a growth industry,²⁸

DISK STORAGE INDUSTRY (1985) [hereinafter DISK STORAGE ASSESSMENT]; OFFICE OF COMPUTERS & BUS. EQUIP., A COMPETITIVE ASSESSMENT OF THE U.S. SOFTWARE INDUSTRY (1984) [hereinafter SOFTWARE ASSESSMENT].

19. The merchandise trade deficit—the difference between the volume of merchandise imported and exported—peaked at a record \$152.7 billion in 1986, 16% larger than in 1985. *1986 Deficit Hits Record \$153 Billion Even Though December Figures Show Improvement*, 4 Int'l Trade Rep. (BNA) 125, 125 (Feb. 4, 1986).

20. BLACK'S LAW DICTIONARY, *supra* note 17, at 130.

21. A merchandise trade surplus occurs when the volume of exports exceeds imports.

22. Woods, *supra* note 18, at 8.

23. SOFTWARE ASSESSMENT, *supra* note 18, at v. The surplus resulted from \$8.5 billion in exports and \$1.6 billion in imports.

24. *Id.* That figure represented \$13.5 billion in exports and \$7.6 billion in imports.

25. Computer equipment and scientific/analytical instruments remain the only two U.S. electronics-based industries with trade surpluses. Woods, *supra* note 18, at 8. The software industry is the only high technology industry that maintains its international leadership undiminished by foreign competition. SOFTWARE ASSESSMENT, *supra* note 18, at iv.

26. DISK STORAGE ASSESSMENT, *supra* note 18, at v.

27. *Id.* Regardless of whether the company is American-owned or foreign, the purchase abroad has an adverse affect on the U.S. as a place of production and on the balance of trade. See *U.S. High Technology Trade Surplus May Slide Into Deficit*, Joint Economic Committee Warns, 3 Int'l Trade Rep. (BNA) 1286, 1286 (Oct. 22, 1986) [hereinafter ITR/*Deficit Warning*].

28. The U.S. computer industry (including its overseas operations) holds an estimated 70% share of the computer market. The value of U.S.-based production has risen 20% annually since 1979. Woods, *supra* note 18, at 8.

growth in the American computer industry's productivity lags far behind that of foreign competitors. In the Pacific Rim and elsewhere, vital new industries challenge the United States' most successful emerging industry by offering high-quality products at attractive prices. Both developed and developing foreign nations have targeted the United States computer technology industry through their industrial policy programs.²⁹ Using tariffs, nontariff market barriers, and other aggressive trade policies, foreign competitors successfully restrain American export growth.³⁰ Although their ultimate effect is difficult to determine, such policies have resulted in lost sales for American companies.³¹ The Japanese, the United States' principal competitors in the computer field, have demonstrated a growing strength in exports of computer peripherals such as printers, disk drives, and terminals, and have gained a competitive position in the personal and supercomputer markets. In a preliminary report released August 11, 1986, Japan's Finance Ministry stated that Japanese computer exports had risen 51.6 percent since July 1985.³² Taiwan³³ and Korea³⁴ are also increasingly visible in the world computer marketplace.

Loss of position in vital high-growth computer technology markets has immense implications for America's future competitiveness.³⁵ The President's Commission on Industrial Competitiveness found the declining United States share of the world high-technology market particularly troubling for several reasons. First, because of the rapidly increasing demand for these products, they represent a major growth opportunity.³⁶ Second, high technology's value is far greater than the trade dollars it

29. See generally Hatter, *East Asian Countries Play Key Role in Eroding U.S. High-Tech Trade Surplus*, BUS. AM., Sept. 2, 1985, at 6-9.

30. Woods, *supra* note 18, at 9-11.

31. As the rate of imports increased, the corresponding rate of exports decreased. From 1979-1984, imports grew at a 51% compound annual rate, while exports increased at a 20% pace. Woods, *supra* note 18, at 8.

32. *July Trade Surplus Hits Record \$8.22 Billion as \$4.52 Billion U.S. Imbalance Also Nears High*, 3 Int'l Trade Rep. (BNA) 1042, 1042 (Aug. 13, 1986). From 1979-1984 Japanese computer exports to the U.S. increased almost sixteenfold. Woods, *supra* note 18, at 9.

33. In 1984 the U.S. had a \$403 million computer trade deficit with Taiwan. Woods, *supra* note 18, at 9. See also Stokes, *Rising Trade Deficit, High-Tech Growth Are Threats to U.S.-Taiwan Relations*, 17 NAT'L J. 2696 (1985).

34. The U.S. had a computer trade deficit with South Korea of \$24 million in 1984. Woods, *supra* note 18, at 9.

35. Competitiveness is defined as "the degree to which a nation can, under free and fair market conditions, produce goods and services that meet the test of international markets while simultaneously maintaining or expanding the real incomes of its citizens." 1 PRESIDENT'S COMM'N ON INDUSTRIAL COMPETITIVENESS, *GLOBAL COMPETITION: THE NEW REALITY* 6 (1985).

36. *Id.* at 16.

represents.³⁷ Innovation increases productivity and allows American firms to earn more than their foreign counterparts. In addition, technologically superior products command premium prices in world markets. Finally, because technology changes quickly, with each advance building on those that precede it, a decline in competitiveness in one round makes it much more difficult to enter the competition at a later date.³⁸

In its consideration of the Amendments, Congress sought a solution to the American computer industry's need to increase exports. Export controls represented a major market barrier: United States export controls were strongly criticized for being less efficient than those regulating foreign competitors. The criticism was well-founded: foreign governments provide more precise licensing guidelines,³⁹ answer questions promptly,⁴⁰ and usually issue licenses quickly.⁴¹ Efficiency is critical to the computer industry, where service and the availability of spare parts after the sale are central factors in product choice.⁴² A study by the National Academy of Sciences confirmed the economic cost of export controls. The study, which focused on the effects of national security export controls on high technology, found that "a reasonable estimate of direct short-run economic costs to the U.S. economy in 1985 was in the order of \$9.3 billion."⁴³ That figure translates to a loss of 188,000 American jobs, all resulting from United States controls on exports.⁴⁴ The overall drain on the nation's economic vitality, including the multiplier effect of that spending on other business, totalled \$17.1 billion.⁴⁵

The time was ripe for policy changes vis-à-vis China. Because of technological evolution and China's rapid development, the liberalization in 1983 of controls on high-technology exports to China had become inadequate. At the time they were promulgated the 1983 relaxation of controls affected about seventy-five percent of license applications to China.⁴⁶ After just two years, however, China needed so many new

37. *Id.*

38. *Id.*

39. Schatz, *A Modem Moving Story*, DATAMATION, July 15, 1984, at 64, 69.

40. *Id.*

41. 131 CONG. REC. H5062 (daily ed. June 27, 1985) (statement of Rep. Mica). *E.g.*, U.S. exporters' Japanese counterparts can be licensed in a month or less. *Id.*

42. Dam, *Economic and Political Aspects of Extraterritoriality*, 19 INT'L LAW. 887, 890 n.17 (1985).

43. Wash. Post, Jan. 12, 1987, at A16, col. 3 (quoting draft report of National Academy of Sciences study).

44. *Id.*

45. *Id.*

46. *Technology Transfer, Financing Problems Hamper Trade Expansion*, NFTC Session Told, 2 Int'l Trade Rep. (BNA) 1374, 1374 (Oct. 10, 1985) [hereinafter ITR/Tech Transfer].

high-technology imports that the decontrol list covered less than half the applications.⁴⁷

The Amendments reflect the current status of the Chinese-American trade relationship.⁴⁸ Congress had two motives in enacting the legislation. The first was to enable American firms to fill the need for technological aid in China's drive for industrial modernization, giving the United States "a chance to change relations in the geopolitical sense, not just in the trade sense."⁴⁹ The second motive was to enact legislation that would ease controls and produce a procompetitive impact on computer exports.⁵⁰

Private industry's reaction to the legislation has been cautiously optimistic. Although Congress faced no opposition from the computer industry, industry representatives have called for more radical decontrol.⁵¹ Despite the recent changes, the industry argues that the United States continues to encumber exporters of high-technology goods with extensive restrictions.⁵²

Although both the House and the Senate agreed on the need to restore America's industrial competitiveness, they had differences of opinion about the role of the Department of Defense (DOD) in the enforcement of controls. In general, the Senate wanted the DOD to review all applications for technology licenses for goods being exported abroad, while the House did not.⁵³ After a "long and hard-fought struggle,"⁵⁴ Congress finally compromised on the issue of DOD involvement.⁵⁵

47. *Id.*

48. See *infra* text accompanying notes 56-77 for Chinese policy on computer technology imports.

49. *Baldrige Sees U.S. Opportunity to Change China-India-U.S.S.R. Ties through Trade*, 2 Int'l Trade Rep. (BNA) 752, 752 (June 5, 1985) [hereinafter *ITR/China Ties*].

50. Note, *The 1983 Amendment to the Export Administration Regulations: The Status of Export Controls to the People's Republic of China*, 6 NW. J. INT'L L. & BUS. 1096, 1104 n.64 (1984-85).

51. Ericson, *Export Decontrol: Some Light Ahead?*, J. Com. & Com., Aug. 5, 1986, at 2A, cols. 5-6; N.Y. Times, Feb. 10, 1987, at A41, col. 2.

52. *Bieber Asserts U.S. Should Establish National Trade Policy to Halt Growing Deficits*, 2 Int'l Trade Rep. (BNA) 1495, 1496 (Nov. 27, 1985) [hereinafter *ITR/Nat'l Trade Pol'y*]; N.Y. Times, *supra* note 51, at A41, col. 3.

53. See 131 CONG. REC., *supra* note 41, at H5061 (statement of Rep. Zschau).

54. *Id.* at S8921 (statement of Sen. Heinz).

55. *Id.* at H5061 (statement of Rep. Zschau). See text accompanying notes 94-99 for a discussion of DOD involvement.

B. China's Open Door Policy Towards Computer Imports

In 1978 the Chinese Government under Deng Xiaoping adopted a new economic policy, often referred to as the "open door policy."⁵⁶ This policy transformed China's development strategy from self-sufficiency to active participation in the world market. By opening its doors to foreign trade, China created a new prospect for American suppliers of computer-related products.⁵⁷ The Seventh Five-Year Plan, released on April 12, 1986, extends the open door policy's market-oriented reforms and decentralization to 1990.⁵⁸ China's past investment in the computer industry under the Sixth Five-Year Plan is expected to double under the current Plan.⁵⁹

China's import activities reflect the priority given to computer technology. The number of import licenses for computer-related products grew from 10,000 in 1983 to 110,000 in 1984.⁶⁰ In 1984 alone, Chinese parties imported some 40,000 to 50,000 personal computers, most of them Apple- or IBM-compatible systems.⁶¹ Mini- and microcomputers and large capacity disk drives are among Chinese priorities for technology import.⁶²

Despite a well-publicized reduction in foreign exchange spending

56. See generally Huan, *China's Open Door Policy, 1978-1984*, 39 J. INT'L AFFAIRS 1 (1985).

57. The Chinese have developed science and technology cooperation programs, educational exchanges, and commercial technology relations with all the major industrialized nations, Eastern Europe, and the Third World. See Simon, *The Evolving Role of Technology Transfer in China's Modernization*, in STAFF OF JOINT ECON. COMM., 99TH CONG., 2D SESS., CHINA'S ECONOMY LOOKS TOWARD THE YEAR 2000: ECONOMIC OPENNESS IN MODERNIZING CHINA 254-86 (Comm. Print 1986) [hereinafter COMMITTEE REPORT]. For a discussion of China's plans for computerization, see Simon, *China's Computer Strategy*, CHINA BUS. REV., Nov.-Dec. 1986, at 44.

58. Stuermer, *Can China Make Its New Five Year Plan Work?*, E. ASIAN EXECUTIVE REP., Apr. 15, 1986, at 9-10.

59. Simon, *supra* note 57, at 44.

60. Meilach, *Peking Reverses Open-Door Policy on Computer Imports*, PC WEEK, Sept. 17, 1985, at 137, 144 (quoting *EDP China Report*, published by IDC Asia, a Hong Kong-based market research firm). In 1984 high-technology licenses for nonsensitive products, particularly computers and scientific instruments, reached \$2 billion. The value of actual shipments probably surpassed \$300 million. *MFN Tariff Treatment for Romania, China and Hungary Will Continue*, 2 Int'l Trade Rep. (BNA) 1051, 1052 (Aug. 21, 1985).

61. Meilach, *supra* note 60, at 144. The number of computers in China has doubled in recent years to about 100 million. ITR/*China Ties*, *supra* note 49, at 752.

62. *Joining U.S. Technology, Chinese Capability Will Produce Globally Competitive Products*, 3 Int'l Trade Rep. (BNA) 874, 875 (July 2, 1986) [hereinafter ITR/*US Tech, Chinese Capability*]. China has standardized on IBM and IBM-compatible equipment. The Chinese prefer to buy compatibles from non-IBM suppliers. King, *Eagle Eye on China*, DATAMATION, Feb. 1, 1985, at 55, 61.

since 1985, computer technology purchases continue to increase.⁶³ Current Chinese policy on computer technology is one of long-term commitment. Computers are considered an essential element of China's modernization plans.⁶⁴ China offers a variety of investment incentives to attract foreign capital, managerial expertise, and advanced technology.⁶⁵ The Chinese Government is developing a more defined legal framework for transactions involving imports of computer technology.⁶⁶ Recently introduced regulations relating to technology transfers have greatly relaxed legal constraints.

Commercial contracts in China can now be negotiated more quickly and efficiently as a result of current Chinese policies.⁶⁷ The Regulations for the Administration of Technology Import Contracts (Technology Import Contract Regulations)⁶⁸ codify general policies on the import of foreign technology that were previously articulated in public statements,

63. However, representatives of U.S. companies are cautious. Tightening hard currency spending may mean a slowdown. Chang & Pow, *Technology Transfer to China: Dealing with the Rules*, E. ASIAN EXECUTIVE REP., Jan. 15, 1986, at 8.

64. *Foreign Exchange Shortage Seen Curtailing Plans to Acquire Most Western Technology*, 3 Int'l Trade Rep. (BNA) 473, 473 (Apr. 9, 1986). China views technological modernization as an essential step toward its long-term economic goals. China uses imports to modernize the energy and transportation infrastructures, both of which restrain economic potential. *Id.*

65. The Government substantially reduces import duties on technically "advanced" items. Huan, *supra* note 56, at 5. Chinese-foreign joint venture projects receive several monetary advantages. The tax rates on projects that import "advanced" technology are much lower than the rates for other projects. *Id.* Also, a balance of foreign exchange is not necessarily required. *Id.* The Provisional Regulations of the Reduction and Exemption of Income Tax on Fees for the Use of Proprietary Technology, *trans. in* E. ASIAN EXECUTIVE REP., Apr. 15, 1983, at 24, offer incentives to purchasers or foreign users in China. Because of the priority status of computer technology, the Chinese Government has great flexibility in allowing relief and may interpret the law in favor of American importers. ITR/U.S. Tech, *Chinese Capability*, *supra* note 62, at 876.

66. The Chinese recognize the need to develop law, particularly commercial law, to facilitate business transactions in China. Horsley, *National Technology Transfer Regs Codify General Policies on the Import of Technology*, E. ASIAN EXECUTIVE REP., July 15, 1985, at 9.

67. See generally Lubman, *Technology Transfer in China: Policies, Practice and Law*, in COMMITTEE REPORT, *supra* note 57, at 287-308. See *id.* at 289-94 (treatment of technology transfer contracts); *id.* at 294-96 (license agreements).

68. As promulgated May 24, 1985, the Technology Import Contract Regulations apply to the following: (1) the transfer or license of patents and other industrial property rights; (2) the provision of blueprints, technical materials, or norms representing proprietary technology or know-how relating to production processes, formulas, product designs, quality control, and management aspects; and (3) the rendering of technical services by foreign companies. Regulation for the Administration of Technology Import Contracts (1985), *trans. in* E. ASIAN EXECUTIVE REP., July 15, 1985, at 28. See generally Horsley, *supra* note 66; Recent Developments, 27 HARV. INT'L L.J. 275 (1986). The Technology Import Contract Regulations apply to contracts for import by Chinese companies, enterprises, organizations, and individuals of technology owned by foreign companies, enterprises, organizations, or individuals. *Id.* at 275.

contract negotiations, or regulations with narrower applications.⁶⁹ Other regulations supplement the Technology Import Contract Regulations.⁷⁰ Parties to a technology transfer must sign a contract that complies with the Foreign Economic Contract Law and with other relevant Chinese laws.⁷¹

Recent changes in Chinese law resolve some of the previous uncertainties about proprietary rights, a particular concern of the computer technology industry. For instance, China's new Patent Law⁷² enables Chinese and foreign corporations and individuals to register inventions, designs, and utility models and thus obtain exclusive rights to their use in China.⁷³ Also, both the foreign investor and consumer now receive more comprehensive protection under an improved Trademark Law.⁷⁴ A recently introduced copyright law significantly affects the protection of rights in computer software.⁷⁵ Finally, while no trade secret law cur-

69. Horsley, *supra* note 66, at 9. The Technology Import Contract Regulations do not offer much guidance on what terms will be acceptable in technology transfer contracts. They require that proposed imported technology be "advanced" and "appropriate," without specifying what will be deemed "advanced" or "appropriate" technology. Torbert, *Technology Transfer to China under the New Regulations*, E. ASIAN EXECUTIVE REP., Sept. 15, 1985, at 8-9; Horsley, *supra* note 66, at 10. The Technology Import Contract Regulations contain a list of additional requirements, at least one of which must be met, and which suggest a third general requirement—that the transfer offer a significant economic benefit. *Id.* at 10. Chinese authorities resolve uncertainties on a case-by-case basis. Torbert, *supra*, at 8.

70. Several local provisions preceded the national regulations. The Interim Provisions of the Shenzhen Special Economic Zone (SEZ) for the Import of Technology, promulgated by Guangdong Provincial People's Congress in February 1984, specifically applied to the nontax aspects of technology transfer. Horsley, *supra* note 66, at 9; see Leung, *Recent Technology Transfer Regulations: Some Comments*, E. ASIAN EXECUTIVE REP., Mar. 15, 1985, at 9. The Provisions of the Xiamen SEZ for the Import of Technology, promulgated by Fujian Province in July 1984, and the Regulations Involving Foreign Economic Contracts for the Shenzhen SEZ, promulgated in February 1984, govern technology transfers between foreign and Chinese enterprises in their respective locales. Horsley, *supra* note 66, at 9.

71. [1 Bus. Reg.] China Laws for Foreign Business (CCH Austl. Ltd.) ¶ 5-550 (Sept. 21, 1987). A contract must describe the relevant technology (including associated patents and trademarks), specify the technical objective to be achieved using the technology, and stipulate the amount, form, and method of remuneration. Horsley, *supra* note 66, at 11. See generally Gelatt & Kraiem, *The Foreign Economic Contract Law: More Autonomy for Contracting Parties*, E. ASIAN EXECUTIVE REP., May 15, 1985, at 9.

72. Patent Law of the People's Republic of China (1984), [2 Bus. Reg.] China Laws for Foreign Business (CCH Austl. Ltd.) ¶ 11-600 (Mar. 14, 1987). See Lubman, *supra* note 67, at 298-303.

73. Chang & Pow, *supra* note 63, at 14. Specialists recommend that American companies use a contract approach in protecting any proprietary information and not rely solely on the Patent Law for protection. ITR/U.S. Tech, *Chinese Capability*, *supra* note 62, at 876.

74. Trademark Law of the People's Republic of China (1982), [2 Bus. Reg.] China Laws for Foreign Business (CCH Austl. Ltd.) ¶ 11-500 (Mar. 14, 1987). See generally Lubman, *supra* note 67, at 303-05.

75. Epstein, *The Law Leaps Ahead*, FAR E. ECON. REV. (Apr. 17, 1986), at 52.

rently exists, observers believe China will eventually adopt one.⁷⁶

In addition, China's National People's Congress recently adopted general provisions of civil law.⁷⁷ The Chinese Government has been responsive to China's economic needs in enacting legislation which has facilitated trade with American high-technology companies. As the Chinese interact with foreign investors and suppliers, they probably will continue to develop law to comport with their changing needs.

C. The United States Export Control System

To assist evaluation of congressional and industry perceptions of prior export policy and full understanding of the changes made by the Amendments, a brief examination of export law as applied to computer technology exports to China follows.

Export controls exist because of a belief that unrestricted private sales to Communist countries may not be in the public interest. Proponents of export controls believe that computer exporters will blindly seek to maximize profit and thereby underestimate the security risks of their own transactions. Thus, the 1979 Act authorizes the Commerce Department to prohibit or restrict exports of goods or technology for reasons of national security,⁷⁸ foreign policy,⁷⁹ or scarcity.⁸⁰ Hardware⁸¹ and software are "dual-use" products—products with nonmilitary applications that could contribute to the military potential of hostile nations.⁸² As such, they are subject to national security export controls.⁸³

In a typical export transaction, the party who proposes to export computer technology from the United States to China must follow the

76. ITR/*Tech Transfer*, *supra* note 46, at 1375.

77. Civil Law, [1 Bus. Reg.] China Laws for Foreign Business (CCH Australia Ltd.) ¶ 19-150 (Sept. 21, 1987).

78. The 1979 Act permits national security export controls on dual-use products. 50 U.S.C. app. § 2404 (1979).

79. *Id.* § 2405. Foreign policy controls may be imposed, *e.g.*, on nations that support international terrorism or violate basic principles of human rights.

80. The 1979 Act permits controls on export of goods in short supply within the U.S. *Id.* § 2406.

81. Hardware includes analog and hybrid computers, digital computers, digital central processing units, random access auxiliary storage, serial access auxiliary storage, terminals, printers, communications peripherals, parts, microprocessor integrated circuits, printed circuit boards, and cathode ray tubes.

82. *E.g.*, electronic chips and integrated circuits can also be used in military weapons systems.

83. For a discussion of export controls on hardware and software, see McKenzie, United States Export Controls on Computer Hardware and Software Exports (1986) (unpublished manuscript).

licensing procedures delineated by the Regulations.⁸⁴ Specific authorization to export in the form of an individual validated export license is required for the export of any controlled commodity or technical data to any destination to which the controls apply.⁸⁵ To obtain an individual validated export license, an exporter must file a formal application for each order for exports of computer products, components, peripherals, or related equipment. In addition, an exporter must submit special documentation for either hardware⁸⁶ or software⁸⁷ exports. Before the OEA will grant a validated license, the proposed export must be reviewed and approved by both the OEA and the Coordinating Committee for Multilateral Export Controls (COCOM).

1. OEA Licensing Review

The licensing procedure involves a case-by-case review of proposed exports. To assist the review, the OEA has set up several guidelines. China belongs to Country Group V for purposes of national security export controls.⁸⁸ Classification of a country in a particular group determines both the requirements for a validated license and the licensing policy for proposed exports to that country. Export policy for China is similar to that for most friendly, nonaligned nations, including Western Europe, Africa, the Middle East, and non-Communist Asia.

The OEA maintains the Commodity Control List (CCL),⁸⁹ which identifies items subject to the Commerce Department's export controls. The CCL provides that validated export licenses are required for the ex-

84. 15 C.F.R. §§ 368-399 (1987). For a general description of the Commerce Department's export control system, see Gerwin, *An Introduction to U.S. Export Control Laws*, PRAC. LAW., Apr. 1986, at 25.

85. 15 C.F.R. § 372.1 (1987).

86. The applicant must submit the following: (1) the computer's parameters and specifications; (2) documentation identifying all parties to the transaction, the proposed location and end-use, and technical justification for the end-user's need for the equipment; (3) detailed information about software to be supplied for use with the computers; (4) assurances against diversion of computers from the stated designation and end-use; and (5) the end-user's agreement to visitation rights by representatives of the exporting firm to confirm that the equipment has not been improperly diverted to unauthorized destination or use. *Id.* § 376.10.

87. An application for a proposed software export requires the following additional information: (1) the name and a functional description of the software and the computer on which it will operate; (2) identification of source or object code and supporting manuals, if included; (3) a description of the scope of training of people receiving the software and the scope of software maintenance and support (to the extent this information is available); (4) export history; and (5) the relationship of the program in the stated end-use of the hardware equipment. *Id.* § 379.

88. *Id.* § 385.4(c). On November 23, 1983, the OEA published amendments to the Regulations, which reclassified China to Group V. 48 Fed. Reg. 53,064-71 (1983).

89. 15 C.F.R. § 399.1 (1987).

port to China of the following: machinery and equipment for the manufacture of electronic equipment, components, and materials;⁹⁰ electronic component assemblies, integrated circuits, and other semiconductor devices;⁹¹ electronic computers and related equipment, including instruments and equipment that incorporate or embody digital computers and microprocessors;⁹² and recording equipment and related items, including magnetic recording media.⁹³ The Advisory Notes in the CCL entries identify commodities likely to be approved for export and contain useful information on the OEA's policies and practices regarding the particular goods.

The OEA divides commodities into three lists—green, yellow, and red.⁹⁴ Products on the green list represent minimal security risks. Green list licensing generally is approved quickly, without interagency review, based on whether there is a risk of diversion to unauthorized users or potentially hostile destinations.⁹⁵ The DOD reviews some computers on the green list to insure that the computers will not be used in a manner contrary to strategic interests.⁹⁶ The procedure generally is conducted in fewer than ten days.⁹⁷ The list includes semiconductor manufacturing equipment, computerized instruments, virtually all eight-bit and sixteen-bit microcomputers, and seventy-five to eighty percent of medium-scale mainframe computers.⁹⁸

High-technology exports usually fall into the yellow and red categories. Both the OEA and the DOD review the application under the more stringent standard of whether the commodities may make a significant contribution to Chinese military potential.⁹⁹ The yellow list contains high-technology exports with potential to affect the national security of the United States. The red list includes the most advanced technology available to the United States, that is, items which could be used in development of advanced military systems. The agencies usually deny permission to export red list items.

90. *Id.* Supp. 1, Group 3, 1355A.

91. *Id.* Supp. 1, Group 5 1564A.

92. *Id.* Supp. 1, Group 5, 1565A.

93. *Id.* Supp. 1, Group 5, 1572A.

94. Overman, *Reauthorization of the Export Administration Act: Balancing Trade Policy with National Security*, 17 L. & POL'Y IN INT'L BUS. 325, 356 (1985).

95. 15 C.F.R. § 385.4 (1987).

96. Ranagan, *Liberalizing Controls on Exports to China*, CHINA BUS. REV., Nov.-Dec. 1986, at 49, 52.

97. *Id.*

98. McKenzie, *China and U.S. Trade: Recent Export Regulations*, 18 INT'L LAW. 455, 457 n.10 (1984).

99. *Id.* at 456-57.

2. COCOM Review

The licensing process does not end with OEA approval if the underlying technology exceeds green list thresholds. Once the exporter has the tentative approval of the Commerce Department, COCOM must also review the validated license application.¹⁰⁰ COCOM, an informal trade organization, reviews requests of member nations¹⁰¹ to export controlled commodities to the Soviet bloc, China, and the other Communist nations of Asia. The objective of the review is to establish a uniform export control program among member nations to protect security interests.¹⁰² To control exports to nations which it considers "hostile," COCOM establishes an embargo list, reviews individual exceptions to the list, and reviews the list multilaterally.¹⁰³

II. THE OEA REGULATIONS: CURRENT TREATMENT OF COMPUTER TECHNOLOGY EXPORTS TO CHINA

The inclusion of China in Country Group V for purposes of regulatory policy appears to be little more than symbolic. Significant exceptions distinguish China from the non-Communist countries in the same group. At the urging of the Commerce Department, COCOM has begun to relax its controls on proposed exports of computer technology to China. The OEA has responded by amending its Regulations.

A. Country Group V Treatment

The Commerce Department ostensibly includes China in Country Group V—a group of friendly, nonaligned nations—as a reflection of official United States policy. As a practical matter, however, exports of computer products to China continue to receive particular scrutiny. The Regulations treat such applications differently because the products have

100. 15 C.F.R. § 370.13(l) (1987). The United States and several allies organized COCOM in 1949 to coordinate export control policies toward communist countries. See generally Aepfel, *Evolution of Multilateral Export Controls: A Critical Study of the CoCom Regime*, 9 FLETCHER F. 105 (1985). In general, goods whose Commodity Number entries are immediately followed by the letter "A" are subject to COCOM review. The Mutual Defense Assistance Control Act of 1951 authorized United States participation in COCOM. Pub. L. No. 82-213, 65 Stat. 644 (1951) (codified at 22 U.S.C. §§ 1611-1613d (1976)).

101. The United States participates in COCOM with Belgium, Canada, Denmark, the Federal Republic of Germany, France, Greece, Italy, Japan, Luxembourg, the Netherlands, Norway, Portugal, Spain, Turkey, and the United Kingdom. 15 C.F.R. § 370.2 (1987).

102. McKenzie, *supra* note 83, at 37; Note, *supra* note 50, at 2020.

103. Note, *supra* note 50, at 1099.

potential strategic application and their proposed destination is Communist China.

In the commodities area, exporters of computer hardware generally have a variety of licensing options. This discussion will focus on the more common distribution license and general license. Exporters to China are usually limited to the individual validated license. For China-bound shipments of software, which the Regulations refer to as "technical data," the exporter must also acquire validated licenses. In addition, because exports of both hardware and software to China generally require validated licenses, exporters must comply with extensive special documentation provisions.

1. Commodities Licensing

Producers of standardized products such as personal computers typically export in bulk. The OEA issues two types of export licenses that are useful for such purposes—the distribution license and the general license. The Regulations, however, require a hardware exporter to apply for individual validated licenses. A validated license, which must be granted for each individual item to be shipped, is a much more restricted option with a time consuming application process.

a. *The Distribution License*

A United States exporter who, for example, contracts with a Chinese buyer to supply a large order of personal computers over a period of several months would benefit from the distribution licensing procedure. The distribution license permits over a period of one year exports of controlled commodities to a specified destination, pursuant to an international marketing plan.¹⁰⁴ Because it is a type of validated license, the distribution license is issued in response to the exporter's application. Although the procedure authorizes exports of commodities destined for most other countries in Country Group V, commodities for export to China are not eligible.¹⁰⁵

b. *The General License*

General license GLV (General License Value) permits the export of controlled commodities of limited dollar values.¹⁰⁶ While general and

104. 15 C.F.R. § 373.3 (1987).

105. *Id.*

106. *Id.* § 371.5. The value of the controlled commodity must not exceed the dollar limit that the CCL specifies. The Regulations permit no more than one shipment per week and prohibit splitting a single order to stay under the value limitations.

validated licenses are identical in legal effect, the exporter's time and effort to acquire them varies considerably. A general license is a broad authorization which permits specified exports without formal application. An individual validated license, on the other hand, must be applied for and approved by the OEA and, possibly, by the DOD and COCOM as well. In furtherance of the United States' obligations to its COCOM partners, the OEA restricts the use of the GLV license for exports of items subject to COCOM consideration, including computer hardware and software. The procedure is available for the export of computer technology to approved Group V consignees, but the OEA Regulations expressly exclude China.¹⁰⁷

2. Technical Data Licensing

The Regulations deem an export of technical data to have occurred when such information is made available or released to nonresident foreign nationals by oral communications within the United States, by visual inspection of facilities and equipment in the United States, or by the application abroad of technical information and experience learned in the United States.¹⁰⁸ Most technical data¹⁰⁹ can be exported to Group V destinations by using general license GTDR (General Technical Data Restricted), which does not require prior OEA approval or license documents.¹¹⁰ Most exports of proprietary technical data,¹¹¹ however, require individual approval.¹¹² The Regulations require validated licenses for China-bound technical data describing products controlled for national security reasons.¹¹³ The validated licensing requirement allows the OEA to review individual applications for the export of technical data

107. *Id.* § 373.3(a)(1)(ii). However, the OEA developed formal guidelines which identify the terms and conditions under which individual validated licenses can be obtained for bulk exports to China of personal and small business computers. These informal guidelines were codified in regulatory amendments issued on December 27, 1985. 50 Fed. Reg. 52,900, 52,908 (1985) (adding Advisory Note 20 to ECCN 1565A, 15 C.F.R. § 399.1, Supp. 1).

108. 15 C.F.R. § 379.1(b) (1987).

109. Software and other technical data is listed under ECCN 1391A. *Id.* § 399.1, Supp. 1, Group 3.

110. *Id.* § 379.4. The GTDR license may be used for technical data relating to many kinds of general industrial equipment.

111. "Technical data" refers to "information of any kind that can be used . . . in the design, production, manufacture, utilization, or reconstruction of articles or materials." *Id.* § 379.1. "Proprietary technical data" is technical data not in the public domain (*i.e.*, not freely available to the public or obtainable at nominal cost).

112. *Id.* § 379.4.

113. *Id.* § 379.4(i). See generally Daunt, *U.S. Export-Import Regulations on Software*, COMPUTER LAW., May 1986, at 22; McKenzie, *Recent Developments in Contracts on Software Exports*, COMPUTER LAW., May 1985, at 11.

relating to hardware designs or embodied in software.¹¹⁴

The validated licensing requirement has important implications for exporters of software sold separately from hardware. The Regulations generally deem software to be technical data.¹¹⁵ Therefore, a validated license is required to export software to China. The main exception is for software that accompanies a commodity, such as a computer, previously licensed for export and that is necessary for the operation of the licensed commodity.¹¹⁶ Thus, at least in theory, exporters may acquire GTDR general licenses for software that qualifies as operating¹¹⁷ and maintenance¹¹⁸ technical data.¹¹⁹ Preprogrammed system software¹²⁰ and applications software¹²¹ to be exported with computers that already have validated licenses are generally eligible for GTDR licensing. The ease of use of general license GTDR is only theoretical, however, because the Regulations require the application for an export license to ship computers to China to include a detailed description of software supplied with the computers.¹²²

3. Documentation Requirements

The Regulations require the exporter to submit lengthy documentation.¹²³ While other exports to destinations in Country Group V are exempt, computer technology exports to China are subject to strict examination because of their potential strategic application. The Regulations require a formidable array of detailed information.¹²⁴

114. 15 C.F.R. § 379.4 (1987).

115. *Id.* § 379.1.

116. *Id.* § 379.4.

117. Operating system software controls "(a) [t]he operation of a 'digital computer' or of 'related equipment', or (b) [t]he loading or execution of 'programs'." *Id.* § 379, Supp. 3.

118. Maintenance system software functions to "(a) [m]odify 'software' or its associated documentation in order to correct faults, or for other updating purposes; or (b) '[m]aintain' equipment." *Id.*

119. *Id.* § 379.4.

120. System software includes operating and maintenance software. *Id.* § 379, Supp. 3.

121. Application software is generally divided into two categories. Cross-industry applications software includes general purpose programs appropriate for many types of users (e.g., payroll or inventory control). Industry-specific applications software includes programs written for a unique industry application (e.g., airline scheduling or demand deposit accounting). The Regulations define application software as "'[s]oftware' not falling within any of the definitions of the other categories of 'software'." *Id.* § 379, Supp. 3.

122. *Id.* § 376.10.

123. *Id.*

124. See *supra* notes 86 (documentation requirements for proposed hardware exports), 87 (documentation requirements for proposed software exports).

B. Relaxation of COCOM Controls

The requirement of COCOM approval of validated license applications for the export of computer technology to China is based on international agreement. The Commerce Department may not amend its regulations without prior multilateral COCOM agreement. When COCOM recently acted to ease controls, the Commerce Department responded swiftly to amend the Regulations.

1. Policy on Computer Exports

In December 1984 COCOM relaxed its controls on computer exports.¹²⁵ The Commerce Department issued new regulations on April 26, 1985,¹²⁶ that reflected new COCOM policy. The regulations eliminated validated license requirements for certain low-level computers with processing data rates (PDRs)¹²⁷ of less than two Megabits per second and total internal storage of 1.1 Megabits or less¹²⁸ and related peripherals. Although exports of computers and related equipment generally require validated licenses,¹²⁹ personal computers such as Apple II, Commodore 64, and Radio Shack Model 100, which were no longer state-of-the-art, were excepted.¹³⁰ Computer-controlled telecommunications switching equipment was also affected. Validated licenses are no longer required for otherwise nonstrategic electronic equipment with embedded or incorporated microprocessors with PDRs of 28 Megabits per second or less.¹³¹ Hard disks, which are necessary to store the extensive

125. McKenzie, *supra* note 113, at 12.

126. 49 Fed. Reg. 50,608-32 (1984). See generally McKenzie, *Changes in Export Controls on Computers and Software*, COMPUTER LAW., Jan. 1985, at 28; McKenzie, *supra* note 113.

127. The export control status of an electronic computer is based on the operating speed of the computer, measured by its processing data rate (PDR). The formula set out in Advisory Note 16 to ECCN 1565A determines the PDR. 15 C.F.R. § 399.1, Supp. 1 (1987). The upper limit for approval approximates a PDR of 1000, although other technical specifications, such as peripherals, disk drives, and main memory capacity, are important factors. Ranagan, *supra* note 96, at 50.

128. 15 C.F.R. § 399.1, Supp. 1 (1987).

129. Exporters of computers and related equipment classified under ECCN 1565A must obtain validated licenses. The category includes analog computers and related equipment, digital computers which are designed to limit electromagnetic radiation or those which can be modified for military use. *Id.* § 399.1, Supp. 1.

130. Higher level machines such as Apple's MacIntosh and the IBM PC-AT remain subject to use restrictions. *Revised CCL on Computers Tightens Some Items, Loosens Personal Computer Controls*, 2 Int'l Trade Rep. (BNA) 4, 4 (Jan. 2, 1985).

131. The regulation does not exempt digital computers embedded or incorporated in other systems except for low-level digital computers embedded in systems that have low total PDRs. 15 C.F.R. § 399.1, Supp. 1 (1987).

Chinese character set, still require export approval.¹³²

2. Policy on Exports to China

Prior to December 1985, critics charged that COCOM's identical treatment of exports bound for China and the Soviet Union was inconsistent with the United States policy of promoting high-technology trade with China. In keeping with its efforts to liberalize export controls on goods destined for China, the Commerce Department set up the China Team Center, a self-contained unit of licensing officers, program officers, and licensing support personnel, on July 16, 1985.¹³³ Because most China cases are now reviewed in a single location, licensing consideration has been accelerated considerably.

COCOM partners and the Commerce Department agreed to improve the processing of license applications for some high technology exports to China.¹³⁴ Amendments to the Regulations issued in the form of a final rule on December 27, 1985.¹³⁵ The final rule made three substantial changes to previous export policy.

a. *Commodity Control List*

The OEA's final rule raised the technical thresholds for proposed exports that require COCOM review. The amendments established or revised the Advisory Notes regarding the computer equipment and technical data categories of the CCL.¹³⁶ The final rule enlarged the scope of the license. Previously, to re-export computer technology which had been licensed for export and shipped to a COCOM country, an exporter had to receive additional COCOM approval. Commodities and technical data within the new limits may now be re-exported to China from COCOM countries under licenses issued by those countries¹³⁷ without COCOM scrutiny.

The change also raised the technical levels for COCOM review:

132. *Id.*

133. *Progress on COCOM Controls for China Reported by Archey in Hill Testimony*, 2 Int'l Trade Rep. (BNA) 1295, 1295 (Oct. 16, 1985) [hereinafter *ITR/Progress on COCOM Controls*].

134. *Id.*

135. 50 Fed. Reg. 52,900-08 (1985).

136. *Id.* The CCL lists goods subject to OEA export controls. 15 C.F.R. § 399.1, Supp. 1 (1987). The computer software controls are set out separately. *Id.* § 379, Supp. 3.

137. Re-export from a COCOM country to China requires no separate authorization if the exporter meets the following conditions: (1) the software must meet the requirements of 15 C.F.R. § 379, Supp. 3; and (2) the COCOM country must approve the license. *Id.* § 379.8.

products within the scope of the Advisory Notes¹³⁸ may be licensed for export to China without COCOM review and approval. The COCOM agreement and subsequent CCL amendments, however, changed very little in the computer technology area. For example, COCOM decided not to review license applications for machines with a PDR of 155 or less, provided the proposed export met all other specifications.¹³⁹ That level is identical to the United States threshold in effect since 1983. Moreover, COCOM liberalization of other categories not previously liberalized in the Regulations is expected to have little effect on the application process. One senior DOD official speculated that processing would be expedited for only an additional two or three percent of all license applications to China.¹⁴⁰

b. *Service Supply Procedures*

The final rule also raised the maximum value of parts that may be shipped to China under the Service Supply Procedure.¹⁴¹ A service supply license authorizes exports of spare parts for goods previously exported. As noted above, provision of spare parts and service is a key issue for computer exporters.¹⁴² Parts for computers and computer-related products may be exported to China if their value does not exceed \$50,000, they do not upgrade the performance of the legally exported equipment being serviced, and all controlled parts being replaced are returned to a COCOM country for disposal.¹⁴³

c. *Documentation Requirements*

Finally, the final rule added a new section to the documentation requirements of the Regulations. The license application to export or re-export computer-related goods valued at more than \$5000 must be accompanied by a "PRC End-Use Certificate."¹⁴⁴ Previously, the OEA recognized end-use certificates from any importing organization. The new regulations require the Chinese importer to provide the United States exporter with a copy of the certificate issued by the Ministry of Foreign Economic Relations and Trade's (MOFERT) Technology Import and Export Department in Beijing. MOFERT certifies that the goods are for

138. For a discussion of products within the scope of the Advisory Notes, see text accompanying notes 89-99.

139. Ranagan, *New COCOM Policy*, CHINA BUS. REV., Nov.-Dec. 1986, at 53.

140. *Id.*

141. 15 C.F.R. § 373.7 (1987). See also McKenzie, *supra* note 98, at 456.

142. See *supra* text accompanying note 42.

143. 15 C.F.R. § 373.7 (1987).

144. *Id.* § 375.6.

use in China and will not be re-exported to a third country. Upon receipt of an end-use certificate with a license application, the OEA can rapidly issue a license that previously required months of interagency and multi-lateral review.¹⁴⁵

Under the new regulations, the Commerce Department predicts a substantial decrease in overall licensing time because of two factors: a decrease in the number of applications that require COCOM review and a reduction in the amount of time required for review of those applications that demand it.¹⁴⁶ The first factor generally does not apply to a great number of computer-related exports. The Commerce Department predicts that applications falling within the new technical specifications for China should be processed within thirty days.¹⁴⁷ Statistics appear to indicate some progress in decreasing processing time. By the end of fiscal 1985, processing times in the OEA for China applications had already been cut to fiscal 1983 levels, although the caseload had increased by 162 percent in the aggregate.¹⁴⁸

III. IMPLEMENTATION OF THE AMENDMENTS

Scepticism abounds over the implementation of the Amendments. Export advocates feel that the Carter or Reagan administrations did not entirely implement prior legislative provisions. Moreover, they believe that the Amendments may not be carried out as proposed.

A. Current Industry Response

Since Congress approved the Amendments in June 1985, the number of licensing applications for exports to China has increased.¹⁴⁹ While initial industry response may be an insufficient basis for speculation on the long-term effect of the Amendments, relaxed controls should allow American producers of computer technology to acquire a good share of the \$4 billion Chinese market for computers and communica-

145. *U.S.-COCOM Agreement Reached on Improving Processing of Exports License Applications*, 3 Int'l Trade Rep. (BNA) 11, 11 (Jan. 1, 1986) [hereinafter *ITR/US-COCOM Agreement*].

146. *ITR/Tech Transfer*, *supra* note 46, at 1374.

147. *ITR/US-COCOM Agreement*, *supra* note 145, at 11.

148. *ITR/Progress on COCOM Controls*, *supra* note 133, at 1296. The time period for the issuance or denial of licenses for low- and high-technology goods being exported to non-COCOM countries is cut by a third under the Export Administration Amendments Act of 1985, 50 U.S.C. § 2409(h) (Supp. III 1985).

149. Ranagan, *supra* note 139, at 53.

tions.¹⁵⁰ Industry representatives, however, expect the Administration to adhere to a strict policy on computer technology exports relative to controls on other exports.¹⁵¹ Meanwhile, business pressure to strengthen the nation's trading position continues to mount.¹⁵² While computer technology firms support national security interests, they feel the current system of export controls, even as amended, fails to address specific concerns about exports to China.¹⁵³

B. Chinese Perspective

A top official of the Technology Import and Export Department of the Ministry of Foreign Economic Relations and Trade has asserted that the Chinese Government is looking to the United States for technology and equipment.¹⁵⁴ Although the Chinese are eager to import computer technology, they dismiss the current United States policy amendment as "only a slight relaxation"¹⁵⁵ and urge the Commerce Department to ease controls further. Two themes recur: Chinese officials object to the continued imposition of national security controls and criticize COCOM controls and the pace of the review process.¹⁵⁶ Theoretically, Chinese objections could be prompted solely by self-interest. Removal of legal barriers to the importation of United States computer technology would best serve China's plans for industrialization. In fact, the Chinese are forced to circumvent United States controls to supply their own needs. There is evidence that the Chinese are continuing to secure United States and COCOM controlled technology, which might be approved under existing controls, without licenses from other sources. In one case, a reported 7000 PC-XTs were smuggled into China without COCOM approval.¹⁵⁷ Such occurrences suggest that the Chinese are likely to demand further relaxation of controls.

150. *U.S. Telecommunications Exhibitions for 1986 in Japan and China are Endorsed by Commerce*, 3 Int'l Trade Rep. (BNA) 24, 24 (Jan. 1, 1986).

151. Ericson, *supra* note 51, at 2A, cols. 5-6.

152. N.Y. Times, June 18, 1986, at D1, col. 6; *id.*, Feb. 10, 1987, at A41, col. 1.

153. *Id.*, Feb. 10, 1987, at A41, col. 1.

154. *Chinese Official Says Technology Trade Could Significantly Grow If U.S. Lifts Restrictions*, 3 Int'l Trade Rep. (BNA) 1387, 1387 (Nov. 19, 1986) (hereinafter *ITR/Technology Trade Growth*).

155. J. Com. & Com., Apr. 23, 1985, at 2A, col. 6.

156. *ITR/Technology Trade Growth*, *supra* note 153, at 1387.

157. King, *supra* note 62, at 61. Other unlicensed imports of controlled items have been reported. See, e.g., *Chinese Interest in Economic Ties With U.S. Cited By Congressional Delegation in Report*, 3 Int'l Trade Rep. (BNA) 1436, 1437 (Nov. 26, 1986).

C. Congressional Assessment

The Amendments fall short of the larger goal of export control policy reform.¹⁵⁸ Congress' original goal was "[t]o unleash the entrepreneurial ability of our high-tech community with a minimum of government interference—consistent, of course, with national security requirements."¹⁵⁹ That goal quickly became subject to complex congressional negotiation. Although the Administration continues to work to simplify licensing, many members of Congress are sceptical that the Amendments will be fully implemented.¹⁶⁰ In the words of House Foreign Affairs Subcommittee on International Economic Policy and Trade Chairman Don Bonker, "[W]e would be fooling ourselves if we thought for a moment that what we've put into this new law . . . is going to be fully implemented, or at least implemented as Congress intended."¹⁶¹

D. Administrative Licensing and Enforcement Policy

Several executive branch agencies with competing objectives are responsible for the licensing of exports and the enforcement of controls.¹⁶² Conflicts arise between the Commerce Department and the DOD in the licensing process, and between the Commerce Department and the Treasury Department's Customs Service in enforcement.¹⁶³ When trade legislation leaves Congress, those competing agencies further shape export control policy.

Historically, the Commerce Department has sought to liberalize export controls to China.¹⁶⁴ The DOD, on the other hand, has attempted

158. 131 CONG. REC., *supra* note 13, at H5060 (statement of Rep. Bonker).

159. *Id.* at H5062 (statement of Rep. Mica).

160. *Id.* at H5061 (statement of Rep. Roth); *id.* at H5060 (statement of Rep. Bonker); *id.* at S8922 (statement of Sen. Heinz); *id.* at S8923 (statement of Sen. Garn); *id.* at S8927 (statement of Sen. Byrd).

161. *Bonker Outlines Plans Following EAA Bill, Suggests Court Suit Over DOD Review Move*, 2 Int'l Trade Rep. (BNA) 952, 952 (July 24, 1985) [hereinafter *ITR/Bonker Plans*].

162. The agencies involved are the Commerce, State, and Treasury Departments, the Central Intelligence Agency, the National Security Council, and the Office of Management and Budget. *Id.* Interagency review occurs when the export in question is sensitive enough to trigger review by a government agency other than the Commerce Department (typically, the DOD). Overman, *supra* note 94 at 333-34.

163. Overman, *supra* note 162 at 12. The Customs Service may search and seize goods at borders and, with permission of the foreign government, may search and seize goods abroad. Export Administration Amendments Act of 1985, 50 U.S.C. § 2411 (Supp. III 1985). The Commerce Department may search and seize goods within the United States and, with Customs Service concurrence, at ports of entry or export. Both agencies may arrest without warrants where there is probable cause to believe export control laws have been violated. *Id.*

164. Wash. Post, Jan. 10, 1984, at D9, col. 5.

to maintain strict controls on exports to all Communist countries.¹⁶⁵ For example, the DOD would like to prohibit overseas sales of some home computers.¹⁶⁶ The results of such tensions are interagency disputes within the Administration, a proliferation of directives, regulations, policy statements, and duplicative investigation efforts.¹⁶⁷ Further compromise in export control policy inevitably ensues when competing agencies search for mutually acceptable solutions. Even if the Commerce Department obeys the letter and spirit of the legislation, thereby alleviating specific interagency concerns, the result may not be sufficient to meet the computer technology industry's economic and political needs.

IV. ARGUMENT AND ANALYSIS

The Amendments and the recent changes in the Regulations represent short-term solutions to long-term declines in the computer industry's ability to compete internationally. The seriousness of the problems Congress addressed in the Amendments is clear. There is substantial evidence of declining American competitiveness in the computer industry.¹⁶⁸ In addition, exports destined for China remain subject to extensive restrictions inconsistent with the objectives of Congress. While Congress' policy for controlling validated licensing has changed radically, the Administration maintains extensive control. Congress did not fully achieve its goals through the Amendments, and it is doubtful that its response was the most effective means of solving these problems.

The current export control system has serious implications for the United States computer industry. While the Amendments improved the previous system, the Regulations perpetuate inherent problems. Frustrated by uncertainties and licensing delays, Chinese customers are turning to other suppliers.

A. Uncertainty

The Amendments are a haphazard compromise between the need to keep United States exporters internationally competitive and the need to protect United States national security interests vis-à-vis China. The effect of the Amendments depends upon their implementation through regulations adopted by the Administration and on Congress' willingness and ability continuously to oversee the Commerce Department's regula-

165. *Id.*

166. King, *supra* note 62, at 61.

167. ITR/*Bonker Plans*, *supra* note 161, at 952.

168. See *supra* text accompanying notes 18-37.

tory actions. Congress and the Administration need to effect a workable compromise between policy and licensing and enforcement administration. Furthermore, they must resolve the COCOM review problem.

1. Export Control Policy

The ambiguity of the Amendments' language is reflected in the inability of the Administration to develop clear and adequate criteria to guide the OEA in making day-to-day decisions. Although the changes have relaxed previous controls, they do not reflect a serious departure in policy.¹⁶⁹ Current policy does not make the tradeoff between economic benefits, political effects, and national security risks in any structured way.¹⁷⁰ For example, a slight security risk justifies restriction, even if potential sales are large. Congress and the Administration need to resolve the conflict between promoting exports of computer technology and tightening export controls.

The export control system needs a clear, well-founded rationale for restricting some goods and allowing others. The conference report¹⁷¹ and floor statements do not provide guidance.¹⁷² The report analyzes few issues the conference resolved and provides no interpretation of the Amendments' provisions.

The effect of national security controls on exports requires re-evaluation. The principal risk involved in increasing technology exports is the possible use of technology in ways posing security threats for the United States if relations with China were to deteriorate. The rationale inherent in the export licensing mechanism is that the export of high-technology products to China will enhance the military potential of the Soviet Union or China. Pentagon officials contend that relaxation of controls would allow the Soviet Union to acquire technology that could be used for military purposes.¹⁷³ The DOD's 1986 report to Congress on its Technology Security Program claimed that export controls saved the United States

169. Commentators have suggested that "waging economic warfare" against the Soviet Union and Eastern bloc countries is the Administration's real purpose behind controls on dual-use technology. *ITR/Bonker Plans*, *supra* note 161, at 952.

170. An empirical study described the tradeoff as follows: If economic and political benefits exceed any costs to military enhancement, the utility of high-technology trade will be enhanced; conversely, trade restrictions will reduce utility if economic and political losses are greater than national security enhancement. Kamerschen & Robinson, *An Analysis of the Export Licensing Mechanism and Its Effect Upon the Competitiveness of U.S. High Technology Exports*, 17 AKRON BUS. & ECON. REV. 12, 15 (1986).

171. 131 CONG. REC., *supra* note 13, at S8921-27.

172. Harris & Bialos, *supra* note 9, at 20 n.1.

173. San Jose Mercury News, Feb. 1, 1987, at 20A, cols. 3-4.

and its allies up to \$13.2 billion in defense spending in recent years.¹⁷⁴

The reasoning underlying the DOD's report is faulty. The report based its finding on a comparison of current realities with two suppositions: (1) less effective controls than those now in force and (2) Soviet acquisition of a number of significant technologies.¹⁷⁵ A government study points out the irony of the first supposition. Approval of a sale to the Soviet Union could take months, even if the proposed export were a microprocessor costing fifteen dollars that a Soviet embassy official in Washington could buy from the local Radio Shack.¹⁷⁶ In addition, the export of United States computer technology to China would probably never result in the occurrence of the second supposition. China is not a member of the Soviet bloc, nor is China committed to the same military aims as the Soviets. The DOD's rationale also assumes that exports of computer technology to China will adversely affect the United States' own military potential. The effect of exports of computer technology on United States military potential is probably negligible, given the small volume of computer technology exports in relation to the total produced and the unlikelihood that United States defense capability is dependent for technological enhancement on computer technology such as is exported to China. The National Academy of Sciences questioned the DOD estimates. "Despite an intensive acquisition effort," the Academy's draft report stated, "the Soviets in general have not succeeded in matching the West's technology edge. . . . It is unlikely that an influx of western technology will enable the Soviet Union to substantially reduce the current gap—as long as the West continues its own pace of innovation."¹⁷⁷

Proponents of strict controls also argue that, with relaxed controls, China would apply computer technology imported from the United States to military ends. Such reasoning relies on several inaccurate assumptions. First, it assumes that exports of computer technology to China's civilian sector may easily be transferred to the military sector. Ease of transfer would depend on whether the rigid organization of China's centrally planned economy could be bypassed to reallocate computer resources. The Five-Year Plan in force provides specific guidelines for proposed government spending. Chinese officials are not likely to di-

174. *Administration Controls Saved U.S., Allies Up To \$3 Billion in Defense, Pentagon Says*, 3 Int'l Trade Rep. (BNA) 1513, 1513 (Dec. 17, 1986).

175. *Id.*

176. STAFF OF JOINT ECON. COMM., 99TH CONG., 1ST SESS., AMERICAN EXPORTS: WHY HAVE THEY LAGGED? 15 (Comm. Print 1985).

177. Wash. Post, *supra* note 43, at A16, col. 4.

vert computer technology needed for industrial development to the military sector and thereby jeopardize China's efforts to decentralize.

Second, the rationale assumes that the export control system provides an effective measure of extraterritorial control. Proponents of controls contend that, through the licensing requirements, the Administration can continue to control the end use and potential reexport of the technology once it arrives at its Chinese destination. It is not clear, however, that United States authorities or companies can prevent the unauthorized use of computer technology, particularly within China's high priority strategic weapons programs. Short of halting computer technology exports completely, which would contravene current policy toward China, the system offers no guarantees of control.

Third, there is an assumption that China, a developing country, has the means to reproduce sophisticated computer technology. While China continues to upgrade its manufacturing technology and know-how, there is no evidence that China could transfer the technology it currently imports into strategic form. In addition, as part of its policy to encourage high technology imports, China has instituted enforceable proprietary rights protections.¹⁷⁸

Even if one accepts the notion that trade with China in computer technology may enhance the military potential of an adversary, the relaxation of controls would not result ipso facto in a dangerous strategic situation. Increased trade simultaneously enhances political leverage.¹⁷⁹ Commentators feel that the United States, by broadening its commercial dealings with China, can contribute to the development of a modern Chinese economy that is dependent on a stable international order.¹⁸⁰ The rationale is as follows: Trade promotes contracts, leading to more effective communication; trade provides mutually beneficial interaction, with interlocking vested interests; and trade fosters convergence of economic systems.¹⁸¹ Although this reasoning disregards the divergent political and economic considerations of communistic China and the capitalistic United States, it is unlikely that trade reduces political rapport. In fact, past technology transfers have played an important part in the United States' growing commercial and political relationship with China.¹⁸²

178. See *supra* notes 72-76 and accompanying text.

179. Kamerschen & Robinson, *supra* note 170, at 15.

180. *Id.*

181. *Id.*

182. *U.S. Energy Technology Transfer Could Aid Both Countries, According to OTA Study*, 2 Int'l Trade Rep. (BNA) 1153, 1153 (Sept. 18, 1985).

2. Licensing and Enforcement Administration

The licensing and enforcement mechanism must be restructured to provide more certainty. In particular, the roles of competing agencies require clarification. Congress deferred consideration in the Amendments of the roles of the DOD and the Customs Service in administering export controls.¹⁸³ As matters stand, the exporter of computer technology is at an initial disadvantage. The OEA theoretically has a strong incentive to withhold validated licenses in close cases. If the OEA grants the license for a controversial export, those who feel controls are too lax may be critical. Alternatively, the DOD may cancel the OEA's approval if the DOD decides to deny the license. If the OEA denies the license, it angers only the applicant, who may then take his chances with the time consuming appeals process. Numerous variations of this scenario are possible with the substitution of other agencies involved in the licensing process.

3. COCOM Review

The United States must take further measures to eliminate the obstacle presented by COCOM's China policy in order to accomplish the ultimate goals of the Amendments. Although many problems have been resolved by recent negotiations,¹⁸⁴ several factors in the COCOM review process may give rise to future trade impediments. First, COCOM members may have divergent interests. Some COCOM members are competitors of the United States in the microcomputer market.¹⁸⁵ Second, members may abuse the review process for commercial gain.¹⁸⁶ A Commerce Department official noted that some of the newly liberalized CCL categories reflect the commercial interests of other members.¹⁸⁷ Third, without continuous review, COCOM guidelines may become technologically outdated.¹⁸⁸ In Fall 1985, however, COCOM members agreed to meet every six months to determine whether application decisions during the interim justify further liberalization of COCOM guidelines.¹⁸⁹

The regulatory changes COCOM announced in December 1985 appear to be a genuine liberalization. Data for the first half of 1986 indicate that United States applications for China-bound exports still constitute

183. 131 CONG. REC., *supra* note 13, at S8922-23 (statement of Sen. Garn).

184. *See supra* text accompanying notes 125-48.

185. King, *supra* note 62, at 59; Note, *supra* note 50, at 2020.

186. Simon, *supra* note 57, at 266; Note, *supra* note 50, at 2020.

187. Ranagan, *supra* note 139, at 53.

188. Note, *supra* note 50, at 2020.

189. Ranagan, *supra* note 139, at 53.

about ninety-three percent of COCOM's United States caseload.¹⁹⁰ It does not necessarily follow, however, that COCOM's regulatory changes do not address the volume of applications. Several factors distort the figures. While the number of applications for China-bound exports remains high, the number of applications for Eastern Europe has dropped.¹⁹¹ Thus, the China applications appear to be a larger share of the total. In addition, the figures do not reflect the complete impact of the December 1985 changes, which were not implemented until February 1986.¹⁹² The figures do not reflect processing time considerations, either. Industry representatives have noted a dramatic reduction in processing time of most green list cases.¹⁹³

B. Delays

American businesses should benefit from the changes in the licensing procedure.¹⁹⁴ The Amendments eliminate about forty percent of the workload, which will "enable Commerce's licensing officers to scrutinize more effectively high technology trade flows and destinations."¹⁹⁵ Computer technology exporters, however, still complain about delays that result from the control system. Industry representatives report that approval of some green list cases takes up to sixty days, even since the December 1985 COCOM revisions.¹⁹⁶

Sales of computer technology to China will never move as quickly as sales to Group V nations because of national security controls. The comparative delay presents a major problem for the industry because of the type of computer technology that is being imported by Chinese buyers. Exporters could expect a relatively better performance if the United States had a comparative advantage related to technology rather than to price competition. For example, buyers might be indifferent to such a long waiting period if the United States were the only available source for the particular computer technology they wanted. The Chinese might likewise be indifferent to delay if the computers ordered included a greater number of customer-specified, custom-designed qualities. If a United States producer offered the most technologically advanced equipment which the Chinese required, delay might be acceptable. For the

190. *Id.*

191. *Id.*

192. *Id.*

193. *Id.*

194. See Export Administration Amendments Act of 1985, 50 U.S.C. § 2409 (Supp. III 1985).

195. 131 CONG. REC., *supra* note 13, at H5060 (statement of Rep. Roth).

196. Ranagan, *supra* note 139, at 53.

most part, however, China imports standardized personal and small business computers.¹⁹⁷ Delay dissuades Chinese buyers from purchasing United States computer technology. Trade figures reflect that result. A considerable portion of the United States loss in export orders is attributable to time delays incurred within the validated licensing process.¹⁹⁸

Trade theory suggests that countries will tend to export those commodities in which they enjoy a comparative advantage.¹⁹⁹ As long as foreign sources can provide China with similar technology more quickly, the United States will be at a competitive disadvantage. To exacerbate the problem, licensing delays are more detrimental to the computer industry than to any other industry.²⁰⁰ Small and medium-sized producers of personal computers, integrated circuits, and components spend a disproportionate amount of time and resources on licensing procedures.²⁰¹ Delays are most frustrating to companies that are new to exporting or are trying to penetrate a newer market such as China. The component nature of much computer technology causes foreign customers to eliminate United States parts and components, thus avoiding delays due to export controls.²⁰²

C. Foreign Availability

The delay and uncertainty associated with obtaining approvals force many foreign customers to choose a non-United States supplier. Although both the United States and COCOM unconditionally approve the great majority of China applications,²⁰³ the applications are for exports to buyers willing to weather the uncertainties and delays of the approval process. The Chinese feel that the controls on the export of technology frustrate China's modernization, causing them to turn to other foreign companies to supply what the United States restricts.²⁰⁴

In passing the Amendments, Congress believed it had addressed the issue of foreign availability so that United States exporters would not be denied market access when other countries did not enforce strict national

197. J. Com. & Com., *supra* note 155, at 2A, col. 6.

198. Schatz, *supra* note 39, at 69.

199. Kamerschen & Robinson, *supra* note 170, at 17.

200. *Industry Groups Call for Changes in Gold Card Licensing Proposal in Comments Filed*, 3 Int'l Trade Rep. (BNA) 1102, 1102 (1986).

201. *Id.*

202. Ericson, *supra* note 51, at 2A, col. 5.

203. Ninety-five percent of China applications are approved. Wolfowitz, *INTERVIEW: U.S.-China Relations*, 39 J. INT'L AFFAIRS 33, 37 (1986).

204. Xu, *China's Economic Reform and Sino-U.S. Relations*, 39 J. INT'L AFFAIRS 27, 29 (1986).

security controls.²⁰⁵ The National Academy of Sciences study suggests otherwise. The study concluded that the benefit to United States national security from strict export controls "is feasible only in the shrinking number of cases in which the United States is the only country possessing the technology."²⁰⁶ United States export controls effectively have prevented Chinese acquisition of certain advanced military technology. Export controls have not prevented China, however, from receiving the type of standardized technology it wants from other countries. According to the study, export controls provided "clear incentives" against buying United States products if other countries could supply comparable products.²⁰⁷ Although the Chinese prefer American products, they have met and discussed transactions with most of the major European and Japanese firms in the computer field.²⁰⁸

China is not the only party hampered by export controls. Controls also hamper any United States company attempting to make a sale. The United States' stringent controls effectively aid foreign competitors of American computer companies. The effect of stringent controls is particularly ironic at a time when the United States is fighting to stave off declines in the computer technology trade balance through efforts to encourage exports and increase trade.

D. Long-Term Implications for the United States Computer Industry

Export controls have immediate effects on the computer industry's ability to compete. They will also have a significant impact on the future of the United States computer industry. The industry reports significant declines in its overseas market shares after Congress imposes national security controls.²⁰⁹ Decreased revenues and diminished world market shares can seriously affect long-term competitiveness by undermining the computer industry's effort to maintain a "technology gap." In effect, the overseas buyer finances the producer's research and development, allowing the producer to maintain technical leadership that generates new products for more sales. A producer suffering from dwindling market share and revenues might not be able to fund sufficient research and development to maintain its innovative edge over foreign competitors. When the ability to produce innovative technology and introduce it

205. 131 CONG. REC., *supra* note 13, at H5060 (statement of Rep. Bonker).

206. Wash. Post, *supra* note 43, at A1, col. 6.

207. *Id.* at A16, col. 2.

208. Simon, *supra* note 57, at 255-56; Huan, *supra* note 56.

209. See, e.g., ITR/Nat'l Trade Pol'y, *supra* note 52 (foreign sales of semiconductor equipment to China). See also *supra* text accompanying notes 43-45.

quickly into the market is crucial, the export control system places the industry at a competitive disadvantage.

An additional long-term consequence will result if delay and uncertainty continue to cause Chinese customers to seek alternate suppliers. The computer technology trade surplus will continue to decline, threatening the leadership of the United States in the software industry. Software sales often are included in the sale of equipment or are required for compatibility reasons. Hardware and software are so interdependent that any market barrier to United States equipment suppliers also has a negative effect on the United States software industry. Growing competition from foreign hardware manufacturers, many of whom also supply software, may result in lost opportunities for United States software producers. As more foreign software firms emerge as alternate sources for separately packaged software, export restrictions on software could further diminish the United States market share.

V. THE AMENDMENTS AS PRECEDENT FOR EXPORT CONTROL REFORM

Recent changes in export law reflect a growing consensus in Washington that laws should be relaxed to allow the computer industry to better compete in the international marketplace. Congress has altered the control system significantly in the last few years by easing its restrictions on exports to China and by modifying its regulation of computer hardware and software. More changes can be expected. Ironically, the stated goal of the Amendments does not correspond with their actual effect. Legislative efforts have been emasculated by China's explosive technological growth. The exportation of American computer technology to China could suffer without further liberalization.

Will further liberalization of export control significantly improve the computer industry's access to foreign markets? The National Academy of Sciences concluded in its recent study that export controls are not a leading cause of the recent decline in the high-technology trade balance.²¹⁰ Part of the reason is macroeconomic; the strength of the dollar and the rise in domestic demand after the 1981-1982 recession are cited as factors.²¹¹ Other influences that contribute to the dreary outlook include foreign trade practices, offset agreements in military sales overseas, and United States firms' greater use of foreign subsidiaries or independ-

210. Wash. Post, *supra* note 43, at A16, col. 2.

211. W. FINAN, P. QUICK & K. SANDBERG, THE U.S. TRADE POSITION IN HIGH TECHNOLOGY: 1980-1986, J. DOC. NO. 842, 100th Cong., 2d Sess. 3 (1986).

ent contractors.²¹² The problem vis-à-vis Japan may also stem from a loss of comparative technological strength.²¹³

While the Academy does not consider export controls a leading cause of recent declines in the trade balance, the study does state that export controls "may tend to exacerbate the U.S. trade deficit by contributing to an environment that discourages export activities by U.S. firms."²¹⁴ The competitive well-being of the United States computer technology industry depends on its ability to sell in foreign markets.²¹⁵ National security export controls have placed United States producers at a disadvantage.

Current and historical United States administrative policy has passed over the economic needs of the computer industry in favor of national security concerns. Policy has permitted neither statutory adaptation nor change in the structure of the governing administrative agency. A wait and see policy is not appropriate for computer technology exports, because it will not satisfy the critical need for speedy processing. What is needed is an acceptable way to accommodate legitimate economic policies in the export control system while maintaining legitimate national security restrictions. Recent changes represent an important step in expediting current licensing procedures, but Congress can shape export administration to achieve its goals more effectively. Export controls are a nonmarket factor that seriously affect the computer technology industry to the disadvantage of United States producers. Export administration represents an appropriate area in which the United States Government can take affirmative action to insure free and open competition.

The competitive situation of the United States computer industry calls for a revision of export controls to accomplish two objectives. A revision should enable the Administration to handle a high volume of routine transactions in a manner that would permit closer scrutiny and enforcement of the relatively few, but more strategically dangerous, transactions. At the same time, a revision should free the computer industry from much of the delay and inconvenience of current procedures. Three specific amendments are suggested.

First, a revision should define adequately the relative importance of competing interagency objectives. Simultaneously, the definition should be flexible enough to produce timely, rational results in keeping with in-

212. *Id.* at 3-4.

213. *Id.* at 4-5.

214. Wash. Post, *supra* note 43, at A16, col. 2.

215. *Id.*

ternational market realities. The Administration needs a realistic standard that it can refer to before deciding to impose controls. Currently, the Administration has discretion to scrutinize applications even for computer technology that falls within the CCL's green list. A new standard should mandate decontrol of technology that offers no serious threat to United States security. The new standard also should allow the Administration to strengthen the enforcement of controls on technology that could harm United States security.

The processing of license applications in the order in which they are received severely handicaps the computer industry. A second revision should provide a special export licensing mechanism that will reduce time delays for standardized computer products, which face greater competition from overseas suppliers. The system should distinguish product groups such as personal computers and peripherals that are most affected by delays. For such products, foreign availability of comparable goods and technology should be the controlling criterion. For technology that is not critical for national security reasons, the OEA should grant an export license if there is an available alternate source.

Third, a revision should make the application process responsive to the requested destination. The revision could accomplish this by instituting expedited licensing consideration for exports to new and critical markets like China. Rather than have the application pass through the entire processing mechanism, the Commerce Department should give priority routings to applications for exports to designated countries.

Any changes in United States export administration must coordinate with COCOM policy. Although the 1985 revisions appear to render review of applications for China-bound computer technology less burdensome, the United States Government should continue to seek mutual agreement and consistent application of national security controls by COCOM members. When the rate of technological progress has outdated COCOM guidelines, the Commerce Department should urge review and update of technological levels. The United States should promote a policy of fair competitive standing among the COCOM members and strong multilateral controls over products that can contribute to Soviet military potential.

CONCLUSION

Expedited licensing procedures and improved technological levels will affect the computer trade balance in the future, but by themselves will not translate into competitive advantage. The recent changes

brought about by the Amendments offer no real remedy for America's declining computer trade surplus. The United States computer industry cannot take competitive advantage of the Chinese market unless Congress and the Administration act to make United States export policy more effective. The problem requires consideration of the computer technology industry's special characteristics and needs, and a concomitant change in export control administration.

